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Acute Coronary Syndromes

ABSOLUTE DELTA AND PEAK HS-CTN VALUES ARE SUPERIOR TO RELATIVE DELTA VALUES IN DIAGNOSING ACUTE MYOCARDIAL INFARCTION IN AN UNSELECTED CHEST PAIN POPULATION

Moderated Poster Contributions
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Session Title: High Sensitivity Troponins: New Insights
Abstract Category: 1. Acute Coronary Syndromes: Clinical
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Background: With the advent of high-sensitive cardiac troponins (hscTn), 'detectable' levels have become the norm and will have to be differentiated from 'elevated' levels. Rising and falling levels differentiate acute from chronic myocardial injury, yet whether to use relative or absolute change or peak values remains to be settled.

Methods: We investigated the diagnostic accuracy of hscTnT (Roche Diagnsotics) and hscTnI (Siemens Vista) in a consecutive unselected chest pain population of 343 patients with hscTn at admission and at a 517 (IQR 446-652) minutes from admission. Fifty-one (14.9 %) were diagnosed with MI, without further differentiation into type I & II. Fifteen (4.4 %) patients were admitted to the intensive care unit.

Results: Comparison of area under the curve (AUC) values for absolute delta (δ), relative δ, peak and first hscTn values demonstrated that absolute δ values for hscTnT (0.968) and hscTnI (0.945) were superior to relative δ values for hscTnT (0.768) (P<0.001) and hscTnI (0.921) (P=0.01), as well as admission hscTnT (0.931) (P=0.024) but not admission hscTnI (0.919) (P=0.196). Also peak hscTnT (0.966) and hscTnI (0.953) were superior to relative δ values of hscTnT (P<0.001) and hscTnI (P=0.046). Absolute δ and peak AUC values were equipotent for hscTnT (P=0.889) and hscTnI (P=0.446). A ROC-optimized absolute δ value of 5.7 ng/L and peak value of 68.6 ng/L were identified for hscTnT yielding sensitivities of 98.0 % and 98.0 %, specificities of 85.8 % and 91.6 %, PPV 57.5 % and 65.8 % and NPV 99.6 % and 99.6 % respectively. For hscTnI a ROC-optimized absolute δ value of 21.5 ng/L and peak value of 137.5 ng/L were identified, yielding sensitivities of 90.2 % and 96.1 %, specificities of 91.4 % and 93.4 %, PPV 64.8 % and 72.1 % and NPV 98.2 % and 99.3 %.

Conclusion: Absolute δ and peak hscTn values are superior to relative δ values in diagnosing acute MI in an unselected population. Absolute δ values for hscTnT and hscTnI in this population are similar to previously proposed δ values, whereas the here suggested ROC-optimized peak hscTnT and hscTnI values represent 5 fold URL and 3 fold URL, respectively.